DRAWINGS

FIG. 1

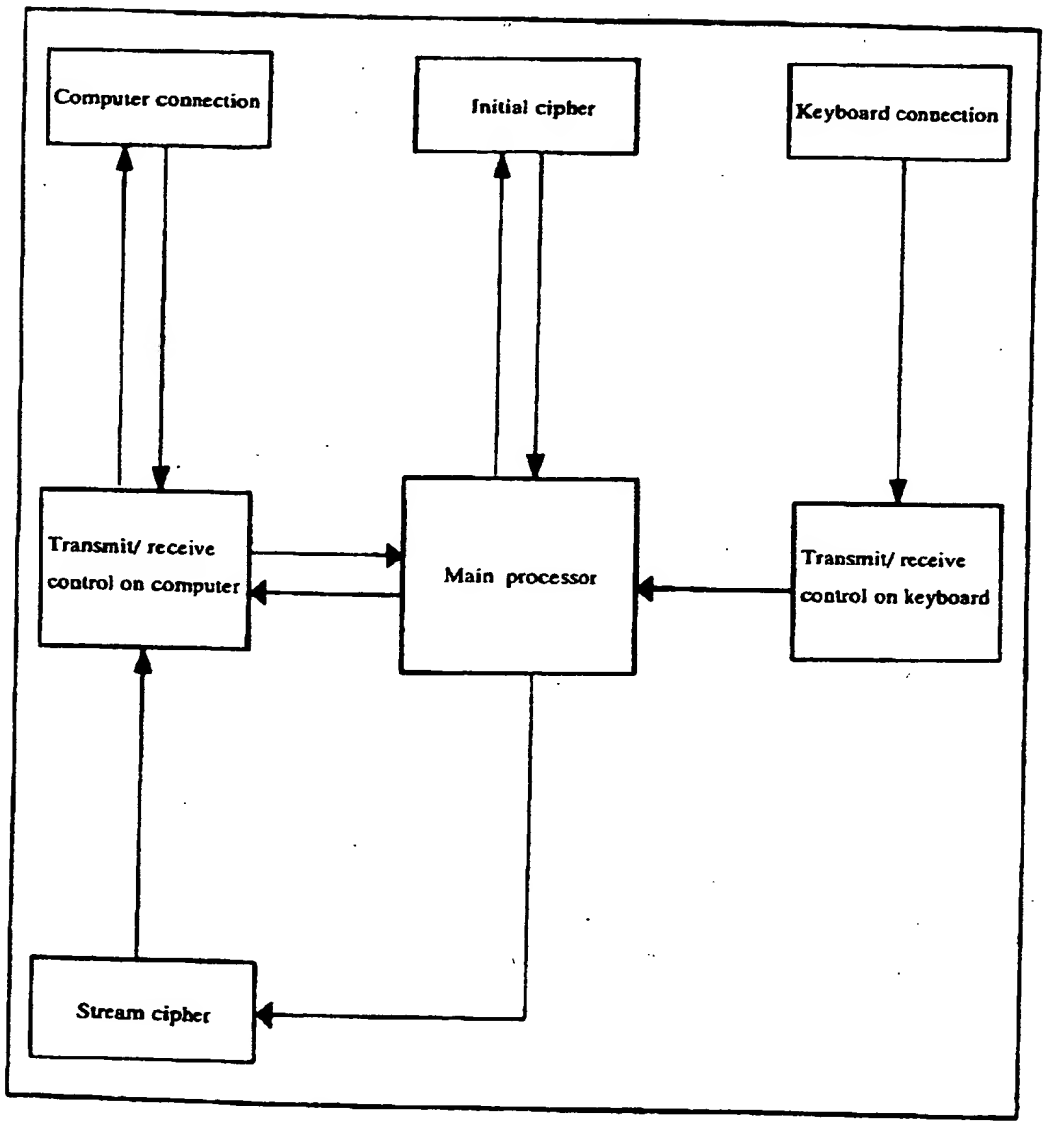


FIG. 2

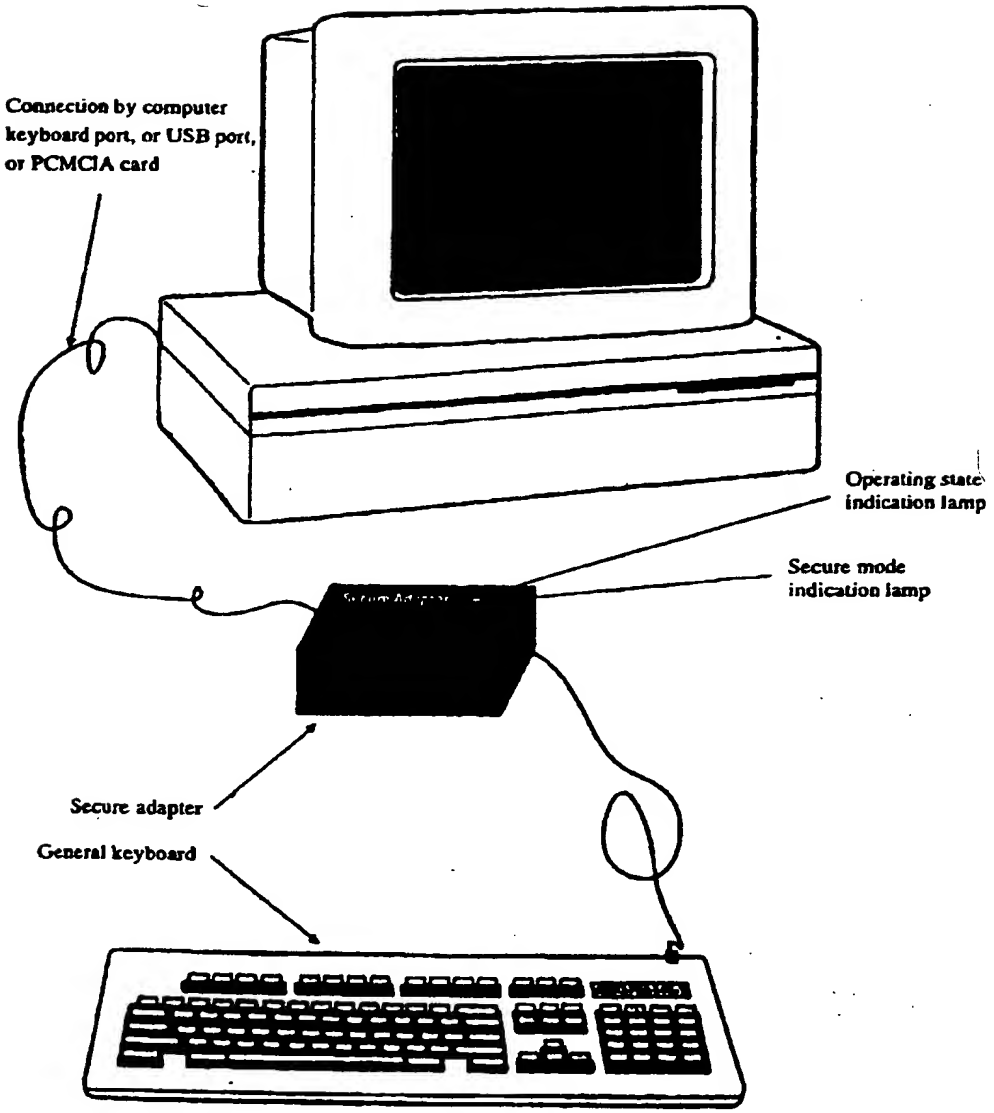

Connection by computer keyboard port, or USB port, or PCMCIA card
Operating state indication lamp
Secure mode indication lamp
Secure adapter
General keyboard

FIG. 3

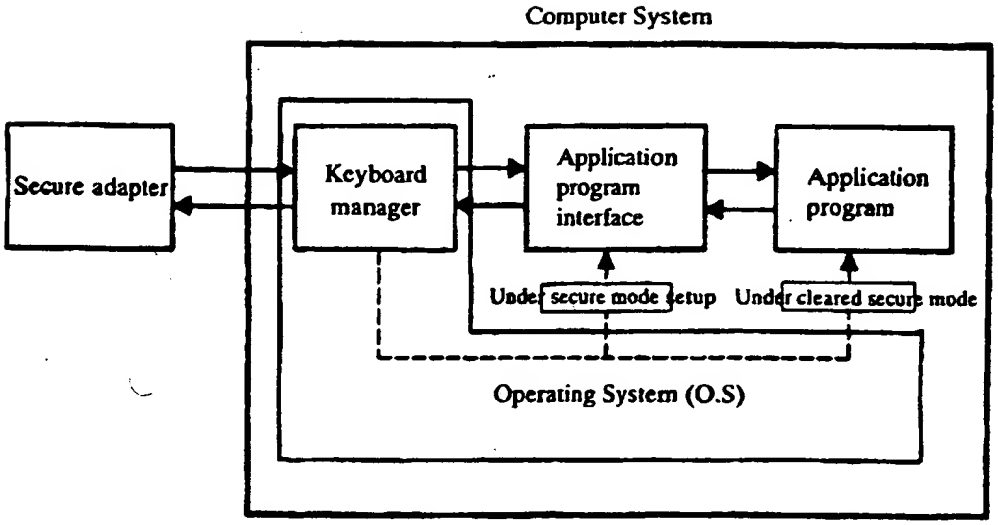

Computer System
Secure adapter
Keyboard manager
Application program interface
Application program
Under secure mode setup
Under cleared secure mode
Operating System (O.S)

FIG. 4

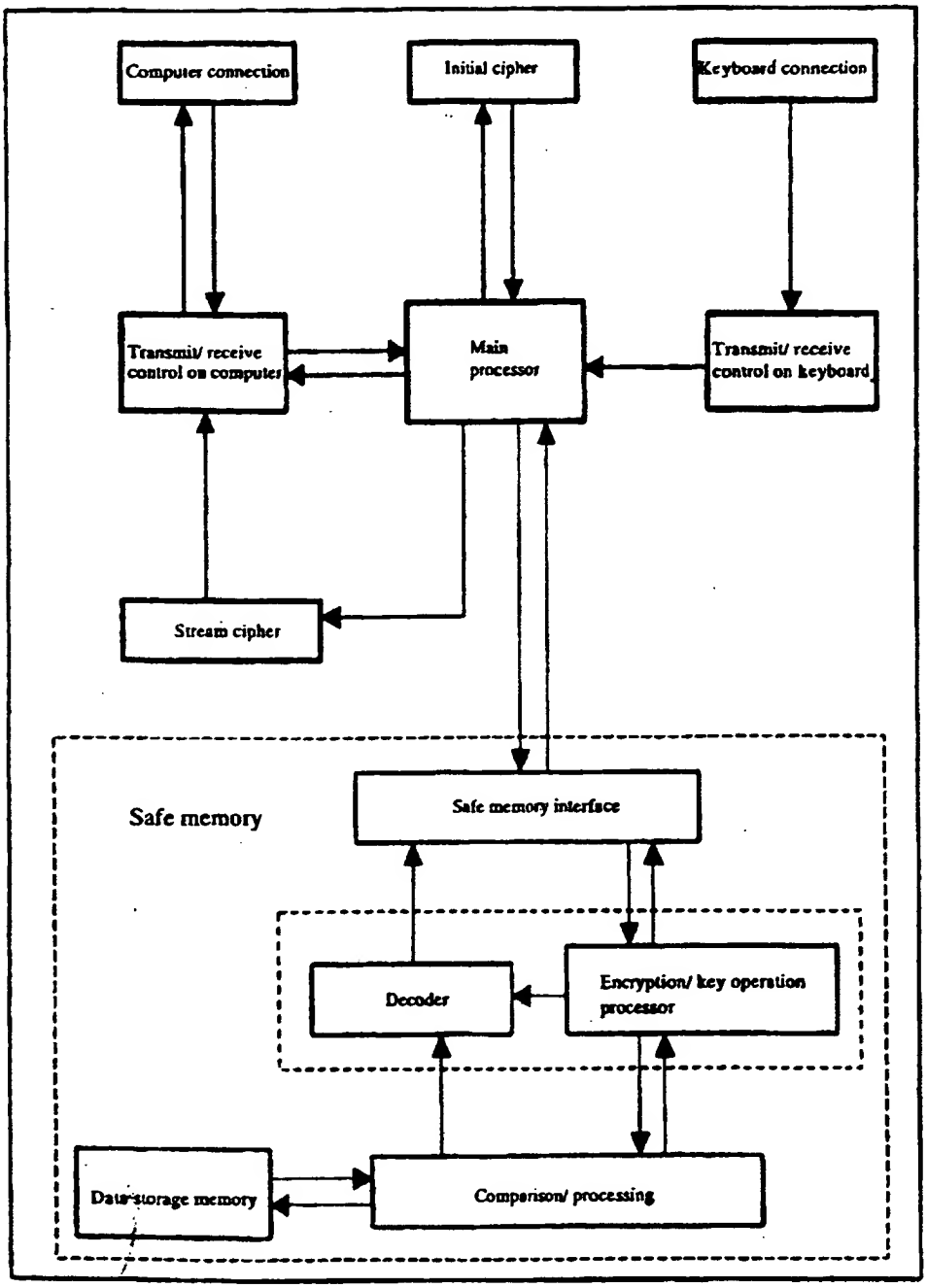

Computer connection
Initial cipher
Keyboard connection
Transmit/ receive control on computer
Main processor
Transmit/ receive control on keyboard
Stream cipher
Safe memory
Safe memory interface
Decoder
Encryption/ key operation processor
Data storage memory
Comparison/ processing

FIG. 5

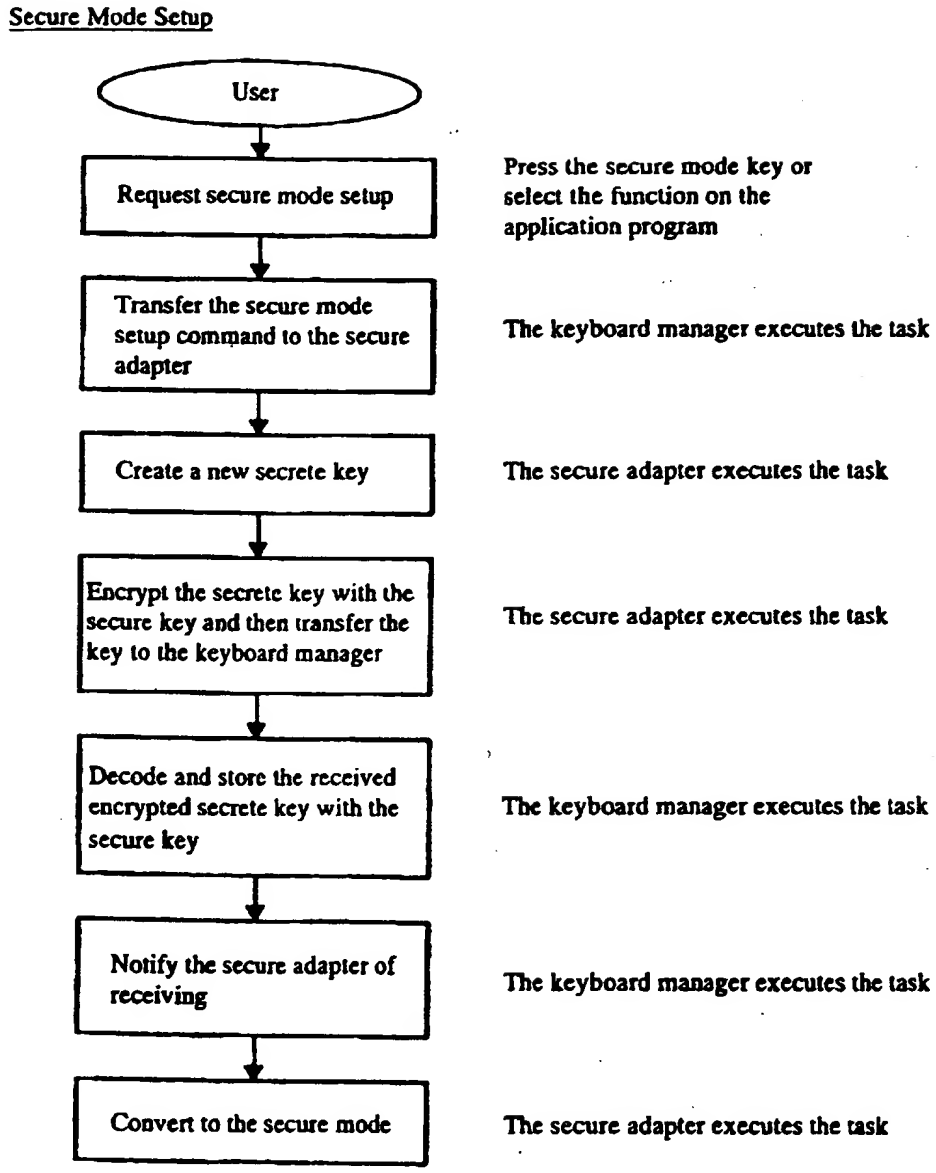
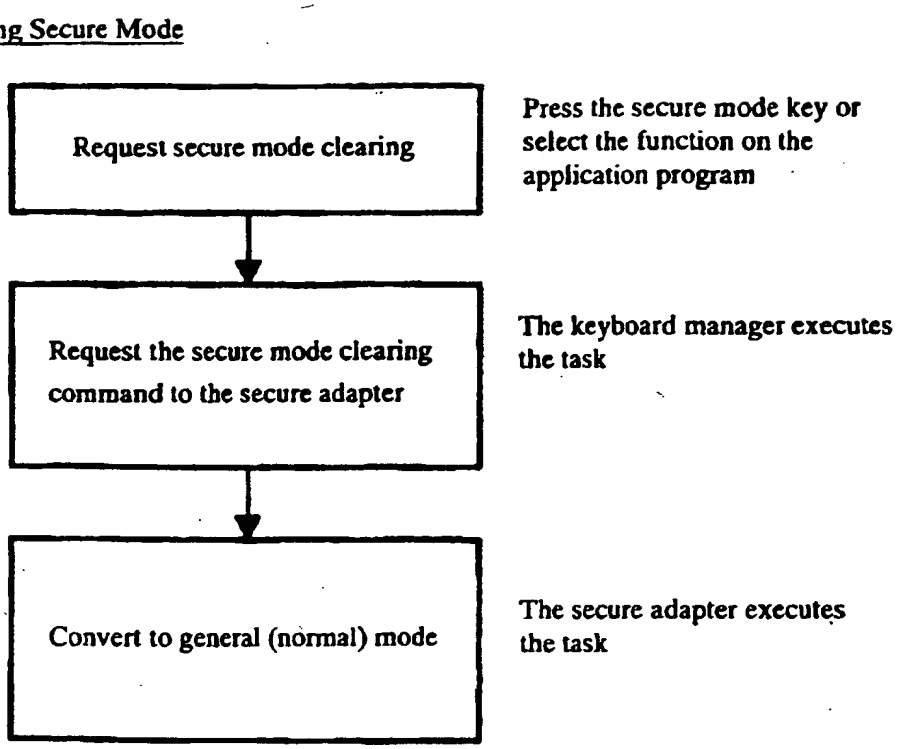

Secure Mode Setup
User
Request secure mode setup
Press the secure mode key or select the function on the application program
Transfer the secure mode setup command to the secure adapter
The keyboard manager executes the task
Create a new secrete key
The secure adapter executes the task
Encrypt the secrete key with the secure key and then transfer the key to the keyboard manager
The secure adapter executes the task
Decode and store the received encrypted secrete key with the secure key
The keyboard manager executes the task
Notify the secure adapter of receiving
The keyboard manager executes the task
Convert to the secure mode
The secure adapter executes the task

FIG. 6



SUBSTITUTE SHEET (RULE 26)

FIG. 7

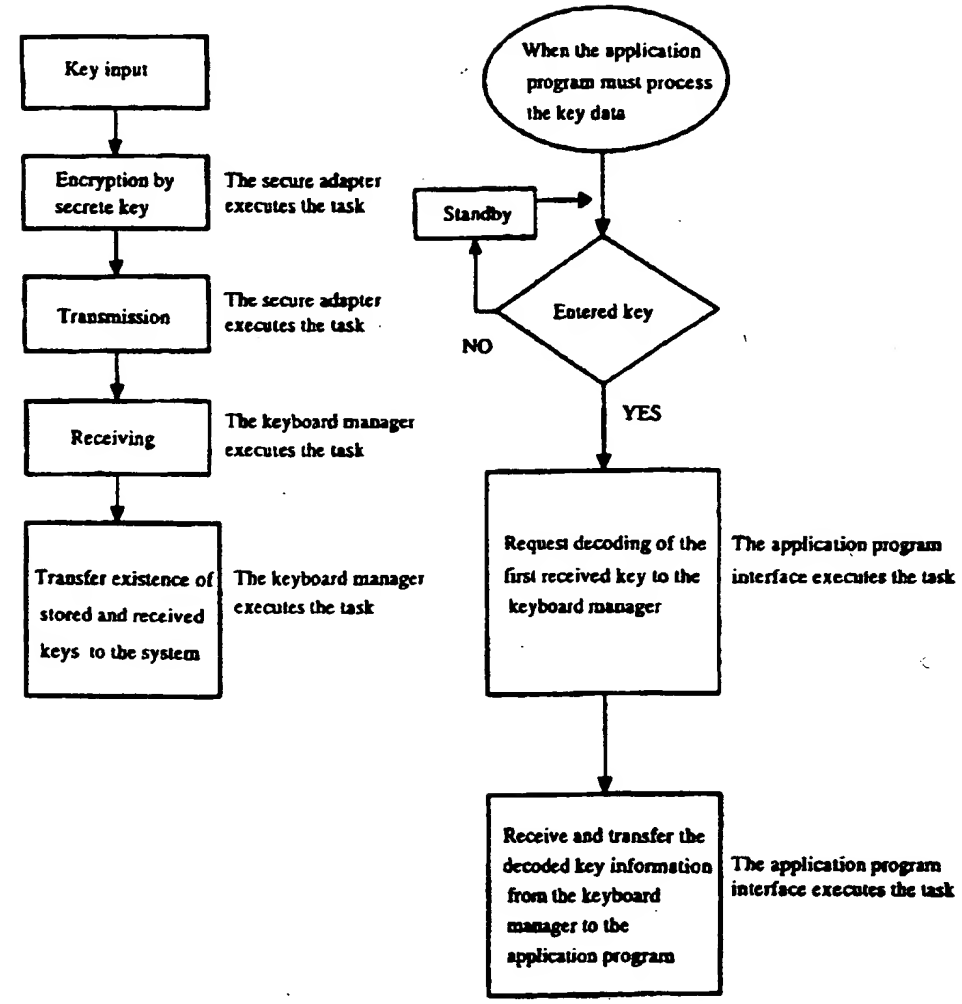

Key Data Processing under Secure Mode
Key input
Encryption by secrete key
The secure adapter executes the task
Transmission
The secure adapter executes the task
Receiving
The keyboard manager executes the task
Transfer existence of stored and received keys to the system
The keyboard manager executes the task
When the application program must process the key data
Standby
Entered key
NO
YES
Request decoding of the first received key to the keyboard manager
The application program interface executes the task
Receive and transfer the decoded key information from the keyboard manager to the application program
The application program interface executes the task

FIG. 8

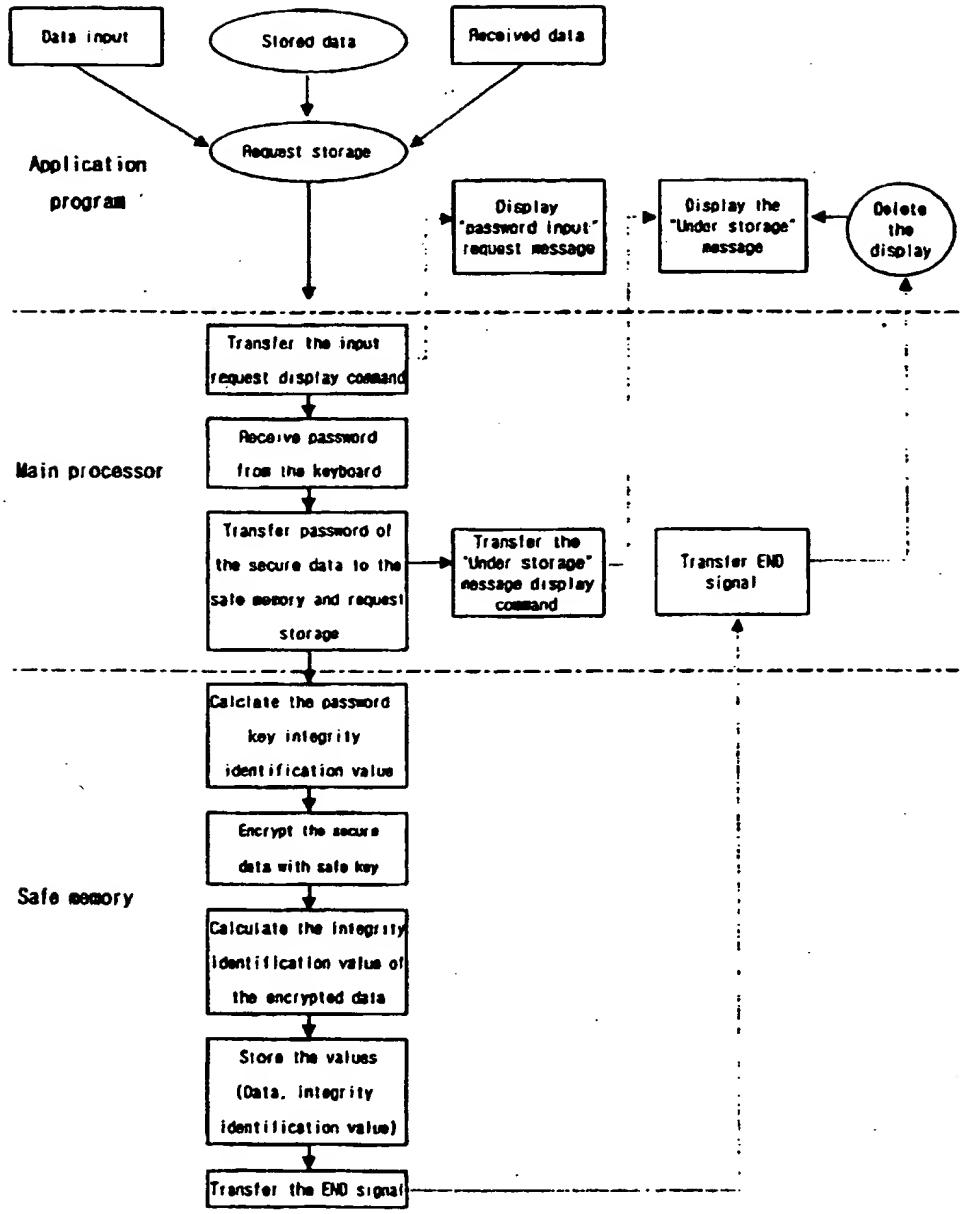
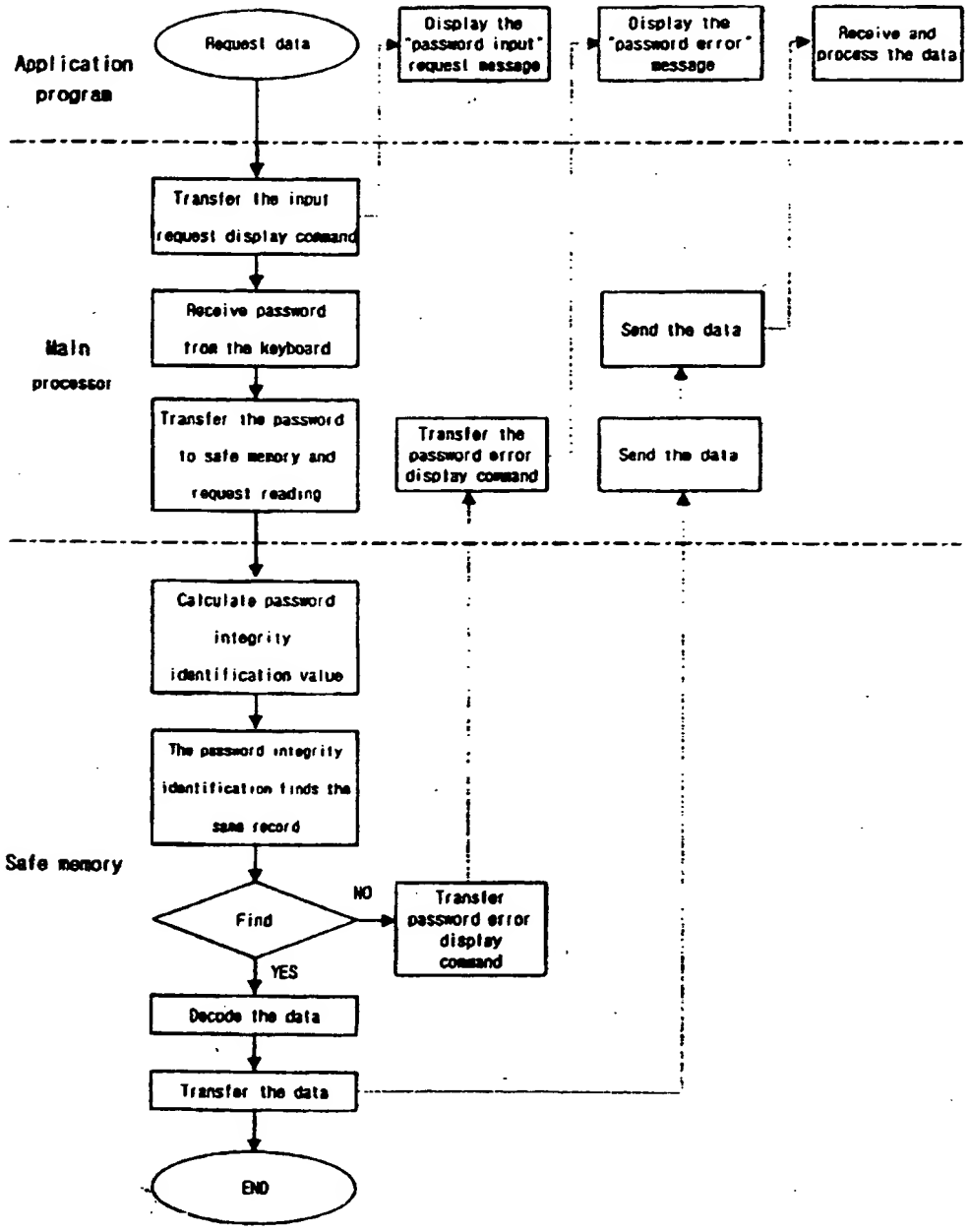

Data input
Stored data
Received data
Application program
Request storage
Display "password input" request message
Display the "Under storage" message
Delete the display
Main processor
Transfer the input request display command
Receive password from the keyboard
Transfer password of the secure data to the safe memory and request storage
Transfer the "Under storage" message display command
Transfer END signal
Safe memory
Calclate the password key integrity identification value
Encrypt the secure data with safe key
Calculate the integrity identification value of the encrypted data
Store the values (Data, integrity identification value)
Transfer the END signal

FIG. 9


Application program
Request data
Display the "password input" request message
Display the "password error" message
Receive and process the data
Transfer the input request display command
Main processor
Receive password from the keyboard
Send the data
Transfer the password to safe memory and request reading
Transfer the password error display command
Send the data
Safe memory
Calculate password integrity identification value
The password integrity identification finds the same record
Find
NO
Transfer password error display command
YES
Decode the data
Transfer the data
END